Jamieson, D., Wilson, R. & Martin, J.R. (2018). Just ticking the box: a social informatics model of the consequences of consent. In *Proceedings of The 19th International Conference on Electronic Business* (pp. xx-xx). ICEB, Newcastle upon Tyne, UK, December 8-12.

Just ticking the box: a social informatics model of the consequences of consent

(WIP paper)

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ABSTRACT

Given the societal diffusion, proliferation and ubiquity of computerised systems and platforms, it is generally perceived by consumers that systems and eBusiness platforms often pose a threat to the privacy of their supplied information (Srnicek, 2017; Andreotti et al., 2018). Furthermore, as we see the replacement of systems that were once manual and paper-based migrate to digital processes and information systems (Lunt et al., 2019), consent in the information era is reduced to 'Yes' or 'No' option, often in the form of a tick box. Additionally, despite the arrival of the General Data Protection Regulation in 2018 as means to provide protection in relation to data processing, we argue that there is a lack of transparency in relation to the intention of this data processing and secondary data use for the purposes of research and marketing, for example. In light of this, we argue that there exists an increasingly difficult challenge to establish a mutual understanding of what consent actually is and what the wider permutations of it represents and comprehends. The lack of mutual understanding, in a digital world that is becoming increasingly reliant on the perceived benefits of acquiring and processing large sets of data (Kitchin, 2014; Breidbach et el., 2019) is deeply problematic. It is not only problematic for the consumer, but also to system developers, platform owners, and data processors alike.

To this end, this paper presents a model, derived from action research, which positions the concept of consent within a socio-technical framing. This model approaches consent, in the context of digital platforms and eBusiness and how it comes to be represented in information systems, as a socio-technical construct of moral orders that imbues the feelings, convictions and aspirations of the consumer as they are engaged in the use of digital systems. We offer that consent is merely approached as an attribute in a data model, rather than relaying the communicative understanding of the consumer. This model introduces the areas of information processing systems and information communication systems as two differing interpretations within which digital platforms can be perceived. We offer these two distinctions as a mechanism to explain and, more importantly, explore the notion of the governance of consent and how this comes to be manifested in information systems.

Keywords: Consent, data governance, information sharing, digital platforms

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INTRODUCTION

Information systems require inputs from its end users that often results in substantial economic, social or legal consequences (Böhme and Köpsell, 2010). In an attempt to explain what it is they are consenting to the consumer is often faced with verbose content containing line-after-line of general and vague terms and conditions lacking clarity (Esmaeilzadeh, 2019). Coiera and Clarke (2004) acknowledge that there is a challenge to ensure that the translation of legal rules designed to regulate human activity, when implemented in an electronic environment, does not have unexpected consequences. Indeed, the ability to implement an entire legal framework which is manifested so simplistically in a few lines of code in an information system is not the easiest of tasks. Despite suggestions by Friedman et al. (2005) to implement a Value Sensitive Design of consent within information systems, their approach is an aesthetic one, concerned with the HCI aspect of consent agreement within information systems and how this comes to be recorded. They continue (*ibid.*) that accounting for human values such as privacy, security and trust however are considerations of informed consent but are not dismissed due to ineptitude and habit (Böhme and Köpsell, 2010).

Take if you will the following scenario with the context of the subject matter of this paper: an application, deployed to and operated using a mobile device such as an iPad, is used by a practitioner to record their engagement with clients. The application records the information of the client and, in subscribing to data protection best practice, asks the client for their consent. The practitioner is confronted by a 'Yes' or 'No' option to confirm if the client provides their consent. The consent, it is inferred, is to confirm that the client agrees to accessing the service and that their data can be stored and processed. By clicking 'Yes' and accepting on behalf of the client, the practitioner also suggests that if the client had said no, it would have been difficult for further engagement and service delivery or intervention to continue.

By using this scenario, our paper asserts that we are concerned with exploring and providing a framing from which we are able to discuss the concept of consent that uses language associated with information *processing* and information *communication*. We do so to highlight that consent, whilst a communicative exchange of information, has been reduced to an instrumental process of data processing. Our ambition is to provide, from a starting position, that consent should have an equal understanding for those that develop, interact with, and are subjects within, an information system application and that it cannot be merely trivialised to a human-computer interaction in the form of a tick box.

FRAMING THE NEED FOR CONSENT: MARY'S STORY

Applying McLoughlin and Wilson's (2013) fictitious but contextual aspect of care provision across a multitude of health and social care provision in which Mary, a 17-year-old, single mother who accesses local services that supports her and her child across a range of health, social, educational and other services. These other services, coupled with those that are publicly provided, include charitable organisations across a small geographical location. Within this locality, the 'wicked problem' of care provision for Mary and what information can be shared amongst care providers exists. To this extent, given the myriad of care providers involved with Mary, not one of them has a full picture or view (McLoughlin and Wilson, 2013) of Mary and her situation. To this extent, the sharing of information would allow for the correct identification and resolution of Mary's issues, however there is a pre-requisite to ensure that Mary has provided her consent to do so. It is at this point that there are larger concerns: not only is Mary unaware of what the implications of providing of consent are, but the manner in which this consent is recorded will not be reflective of her conversations with her care providers. The framing of the recording of consent – and indeed the consequences of the recording this in traditional measures – it one of the very issues we identify as a means to mode on facilitate the discussions to move discussions forward.

RECONCEPTUALISING THE INFORMATION PARADIGM

In order to explain our approach within this paper, it is first important to present our definitions of information systems, information processing, and information communications. At the most abstract level, we conceive an information system as a group of information objects which has the ability to store, transmit and transform said information objects. These information objects may be generated directly by "subjects" - which may be End Users or created automatically from sensors and measuring instruments. An information system, we suggest, is an attempt to represent - and therefore interpret - "real-world" entities, processes, and relationships. Typical information technology design and development processes conventionally undertake the task of translating, regulating, making any subsequent changes to information objects, and having them represented within an application (McLoughlin and Wilson, 2013). As such, we take this way of conceptualising information systems to be representative of an information processing paradigm. This paradigm adheres to a simplistic, two-part - or dyadic - relationship between information objects and the subject. At a very rudimentary level we represent this as follows in Figure 1:

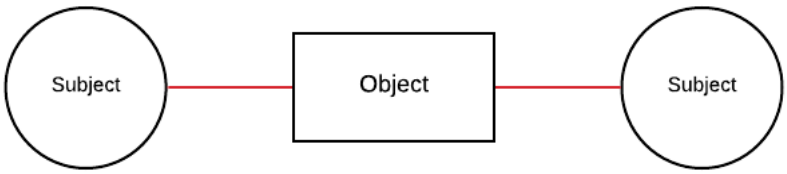

Figure 1: A representation of a dyadic information processing paradigm

As such, information systems are perceived as entities that make changes to information objects which are very-much transactional in their nature. They are defined in terms of pre-conditions, the transactional process itself, and a set of post-conditions. The purpose of the information system - as perceived through this paradigm - is, in effect, the recording of these transactions to provide a digital ledger and evidence of their occurrence and legitimacy. The dyadic perspective is, in essence, able to describe data transmission and its distribution in the traditional Shannon and Weaver (1963) perspective.

However, given we need to address the notion of consent beyond the simple transmission of information objects, there is a requirement to consider more than the transmission of information objects. As such, with regards to the subject of consent, we need to establish a clear distinction between the information objects that are processed and transported in various ways ("content") and the roles, norms, origins and intentions of the subjects who generate and interpret the information objects ("context"). This *triadic* – as opposed to the dyadic - representation makes explicit the exchange between subjects and also includes the relationship between both subjects and information objects. This also highlights the necessary requirement for the inclusion of context and content - and representation - within information systems. This is more apparent when discussing consent: we wish to establish not only that consent was given or withdrawn – that is information which is generated and exchanged within the information system("content") but also under which perspective it was given and the purposes of its

contents ("context"). To express this further, we provide the following representation in Figure 2, which highlights the extension of an information processing paradigm:

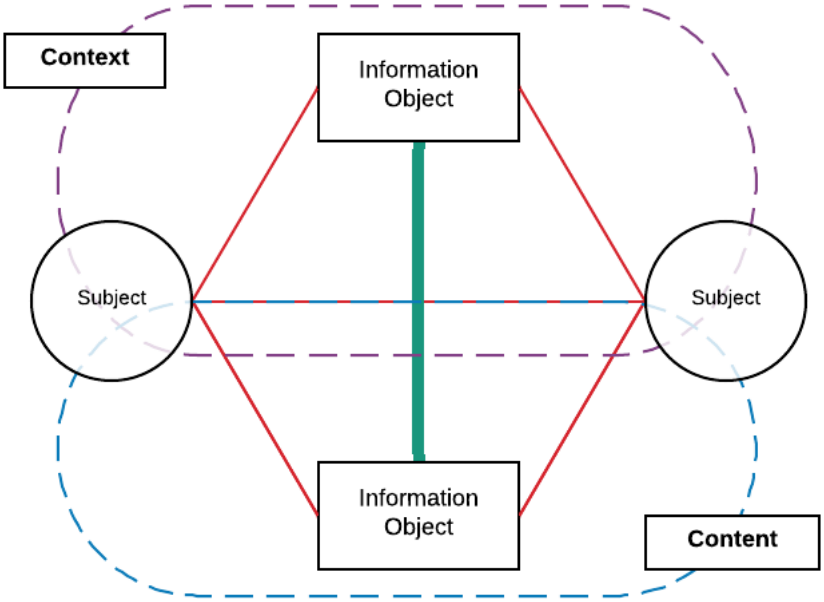

Figure 2: A representation of a triadic information communication paradigm

The impact, certainly from an information system perspective, suggests that content and context cannot be subsumed into a single data model. This single data model is often represented simply as a "Yes" or "No" and manifests itself, even in this era of data processing legislation, as a tick box across a plethora of information systems, digital or otherwise. As such, a remedial measure exists: to migrate beyond an information processing paradigm, *context* merely needs to become - as would be familiar to a data scientist, analyst, or database and systems developers - meta data of *content.* As a result. a shift toward an information communication paradigm allows for the inscription of relationally between subjects and the intentionality of their content. We therefore extend the paradigms of information processing and communication

REPRESENTING CONSENT IN THE CONTEXT OF INFORMATION PARADIGMS

As we have presented, the manner in which consent is conceptualised within information systems is in need of being addressed. In order to do so, we seek to understand how and why existing manifestations -namely the "Yes" or "No" representations of consent - have come to be implemented. To assist us, we look to Krippendorff (2009) and the approach to Ashby's information theory. Applying this theory to the context of the construction and deployment of information systems allows for the consideration of the variety of informational views. These views help to determine as to how information is defined and therefore represented as a set of layers which is pertinent to those actors to that perceive it from their perspective. From this we suggest four views - or levels - as Record, Curate, Narrate and Instigate. We discuss these in detail in the following section.

Record view of information

With the Record view, we concern ourselves with the handling of chunks of data. Here, we talk about exactly where the data is and how and when it moves - this is where the mechanical processes of creating, storing, processing, transporting, and presenting chunks of data takes place. It is made up of tangible entities and its states, behaviours and transformations can be observed and recorded in systems logs; we are able to measure the quantity of information present in any situation and identify and fully characterise the medium within which it is being maintained or transported. However, the Record-level says nothing of the meaning of the data: the representation of values within a field of Excel spreadsheet, for example has no context. This view of information is, at its core, the detection, measurement and record of concrete events.

Curate view of information

At this view, we represent all our data models, terminologies, message and document standards and are concerned with codes and their denotations - for example, the codification of whether consent was given or not as translation of 'yes' or 'no'. At the 'Curate' view, consent is an attribute within a data model, i.e. the value of a data item on the basis of which functions can be allowed or prevented at the recorded level, for example, to grant or withhold the access of a particular user to a particular set of data to a particular user on a specific occasion. The consent attribute must be attached to an entity represented in a data model. This could be the identity of the consenter in the role of patient implying that the consent is global to all of that individual's data, it could be attached to certain classes of data. In this case the granularity and discrimination depend on the classification scheme that is implemented at the Recorded view.

Narrate view of information

Here we consider the roles and responsibilities which form the contexts in which information is generated and, ultimately, interpreted. In this view, we specify and record the norms and expectations associated with the roles and relationships we intend to mandate and support. Also, at this view, a consenting individual is assuming or accepting a role which involves a set of accountabilities and responsibilities in relation to other roles and a set of rights or duties. Role and right of duties are with respect to certain instruments such as a statement of consent. At this level we must consider the conversational mesh which includes the practitioner who has the duty to inform and the instruments we take to be appropriate vehicles for the information which is the content associated with being informed, the empowered party who can act on the basis of the consent, and a number of other parties.

Instigate view of information

At the Instigate view of information, this encompasses identity, value and principles and shared significations where meanings come to be accepted. At this view, we consider the experience of those from the inside, as a participant within the system but also consider the imposition of policy, law and culture.

To aid with the representation of the views of information, we provide the following in Figure 3 to illustrate this alongside their definitions:

View of infromation	Definitions of information
Instigate	Individual and collective identities, values and principles
Narrate	Roles, relationships and responsibilities
Curate	Codes, terms and entities
Record	Values and records

Figure 3: Views and definitions of information (adapted from Krippendorff, 2009)

Furthermore, in order to frame our previous conversation regarding the information processing and information communication paradigms, we suggest that information in relation to consent is viewed at a Record and Curate-level, when in actuality it should be viewed at a Narrate and Curate-level. Given that we have access to language, categorisations, information objects and subjects, these are collapsed and represented within the Curate and Record views as a representation of mandates

and acceptability. The following in Figure 4 illustrates how we understand the views and definitions of information encompass each information paradigm:

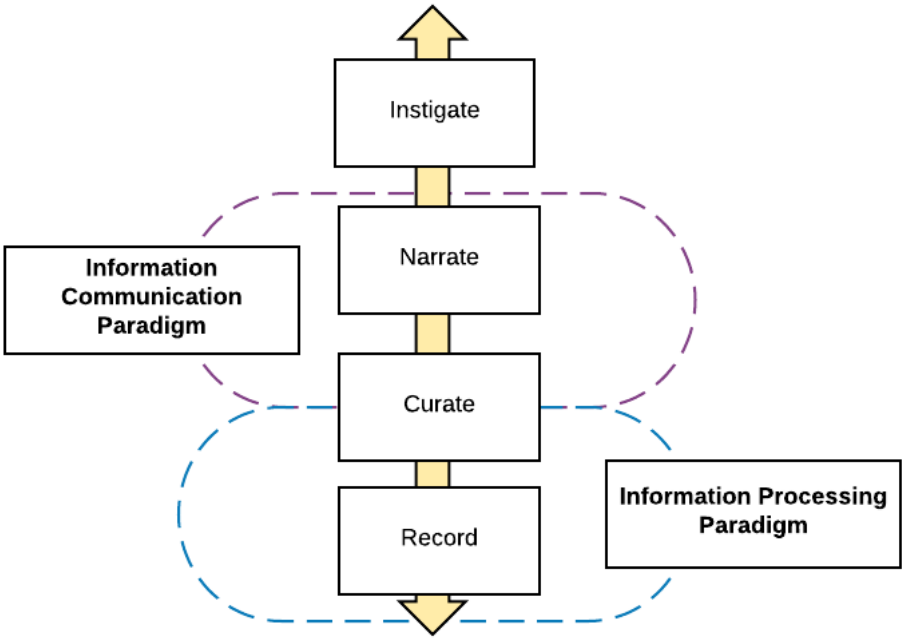

Figure 4 - Views and definitions of information (adapted from Krippendorff, 2009) within the context of information processing and information communication paradigms

We believe that the representation of this model provokes further the understanding and concepts of contentious subjects such as consent. Given this, should we apply the concept of an information communication paradigm to consent, the instruments of consent - the individual's ability to grant or withdraw consent - commence with the narrative setting within which they are provided. This is in contrast to where consent is usually reduced to the Record view of information. The impact of which is that, as we have discussed, is that consent and its onward impact and consideration are merely treated as a data field and limited to a Record and Curate view of information which then reduces the ability to explore consent – grant or otherwise – is correctly communicated to those that are end users of an information system. We are not attempting to develop an approach here that is dismissive of the Record and Curate views of information (the information processing paradigm) as these views are what are needed to ensure that an information system is, and remains, a manageable artefact. Indeed, what we are trying to provide here is the notion of governance, one that confirms intentionality, ("Did we intended for this to happen? Is this what we intended?") of the information system.

CONCLUSION

Within this paper we have applied a critique to the use of the conventional paradigmatic perspective on information systems and how this is applied to the notion of consent. In response to this, we have provided an alternative approach based upon which we refer to as the information communications paradigm alongside an initial, theoretical framing. Within this discussion we have identified a number of factors associated with considerations of consent when applied within information systems, and how the use of an information communication systems and an associated paradigm is required in order to support the accurate recording of the conversations regarding consent. Whilst the application here is somewhat limited, it warrants further research and application in order to improve further the discussions regarding consent and how they are framed - currently and incorrectly - within the information processing paradigm. We believe the discussions of consent within the context of an information communication paradigm has equal benefit to the end user, the information system owner, and the information system developer.

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